

Contents

Letters to the Editor

- First detection of the aromatic 3.3 μm feature in the diffuse emission of the galactic disk
Giard, M., Pajot, F., Lamarre, J.M., Serra, G., Caux, E., Gispert, R., Léger, A., Rouan, D. L1
- PHL 346, a β Cephei star situated at more than 5 kpc from the galactic plane?
Waelkens, C., Rufener, F. L5
- Discovery of very high velocity outflow in V Hydra: Wind from an accretion disk in a binary?
Sahai, R., Wannier, P.G. L9
- Dwarf and giant extragalactic megamasers: IRAS 1224-0036 and IRAS 1201 + 1941
Martin, J.M., Bottinelli, L., Dennefeld, M., Gouguenheim, L., Le Squeren, A.M. L13
- The detection of a discrete outflow from the young stellar object GL 490
Mitchell, G.F., Allen, M., Beer, R., Dekany, R., Huntress, W., Maillard, J.-P. L16
- Spectral characteristics of the emerging X-rays from a possible pulsar in Supernova 1987 A
Mastichiadis, A., Ögelman, H., Kirk, J.G. L19
- Molecules in external galaxies: the detection of CN, C₂H, and HNC, and the tentative detection of HC₃N
Henkel, C., Mauersberger, R., Schilke, P. L23
- Optical flux changes in the Crab Nebula
Véron-Cetty, M.P., Woltjer, L. L27
- A morphological effect in pairs of elliptical galaxies
Davoust, E., Prugniel, P. L30
- Kinematic evidence for a central mass concentration in the Sombrero galaxy (NGC 4594)
Jarvis, B.J., Dubath, P. L33
- An explanation for the Stokes *V* asymmetry in solar faculae
Sánchez Almeida, J., Collados, M., del Toro Iniesta, J.C. L37
- New evidence against the existence of very massive stars
Heydari-Malayeri, M., Magain, P., Remy, M. L41
- Reanalysis of the SN 1987 A neutrino time distribution
Roos, M. L44

Extragalactic astronomy

- Detection of the galactic wind effect for the cosmic ray propagation in the edge-on galaxy NGC 4631
Werner, W. 1
- Galaxy counts in the Coma supercluster field. II. Automated image detection and classification
Slezak, E., Bijaoui, A., Mars, G. 9
- A recursive relation for the energy of non-thermal particles in a non-homogeneous medium
Zaninetti, L., Siah, M.J. 21
- Amorphous galaxies as the end product of tidal interaction
Noguchi, M. 37
- Correlations between integrated parameters and H α velocity widths in giant extragalactic H II regions: a new appraisal
Arsenault, R., Roy, J.-R. 199
- The stellar content of the wing and north-east arm of the Small Magellanic Cloud
Kontizas, E., Morgan, D.H., Kontizas, M., Dapergolas, A. 208
- Extended regions of ionized gas around active galactic nuclei
van Heerde, G.M. 213
- CO and dust in the barred spiral galaxy NGC 1365
Sandqvist, Aa., Elfhag, T., Jörsäter, S. 223

Galactic structure and dynamics

- The 4:1 resonance in barred galaxies
Contopoulos, G. 44
- Dynamical mass modelling of the Galaxy
Rohlf, K., Kreischmann, J. 51

Formation, structure and evolution of stars

- Coordinated X-ray and optical observations of the pulsating X-ray transient A 1118-61
Motch, C., Janot-Pacheco, E., Pakull, M.W., Mouchet, M. 63
- Stellar consequences of enhanced metal opacity. I. An attractive solution of the Cepheid period ratio discrepancies
Andreasen, G.K. 72

Stellar atmospheres

- Detection of ^{13}C radio emission from ^{13}C -rich carbon stars
Jura, M., Kahane, C., Omont, A. 80
- (RN) The spectrum of U Scorpii in the 1987 outburst
Rosino, L., Iijima, T. 89
- Modeling of long-duration two-ribbon flares on M dwarf stars
Poletto, G., Pallavicini, R., Kopp, R.A. 93
- Non-LTE line formation in early B and late O stars. I. Singly ionized oxygen
Becker, S.R., Butler, K. 232
- Neutral oxygen in Herbig Ae stars
Felenbok, P., Czarny, J., Catala, C., Praderie, F. 247
- Behaviour of O I triplet λ 7773. I. Normal stars
Faraggiana, R., Gerbaldi, M., van 't Veer, C., Floquet, M. 259
- (RN) Lithium and rotation in the Hyades late F and G stars
Rebolo, R., Beckman, J.E. 267
- (RN) Deuterium in early-type stars. The case of α Pavonis
Vidal-Madjar, A., Ferlet, R., Spite, M., Coupry, M.F. 273

Diffuse matter in space (including H II regions and planetary nebulae)

- Cosmic ray acceleration in giant molecular clouds
Richardson, K.M., Wolfendale, A.W. 100
- First VLBI synthesis observations of the excited-state OH emission sources at 4765 MHz in W3(OH)
Baudry, A., Diamond, P.J., Booth, R.S., Graham, D., Walmsley, C.M. 105
- Estimate of interstellar helium parameters from Prognos 6 and Voyager 1/2. EUV resonance glow measurements taking into account a possible redshift in the solar line profile
Chassefière, E., Dalaudier, F., Bertaux, J.L. 113
- A multilevel study of ammonia in star-forming regions. IV. Emission and absorption toward W3(OH)
Mauersberger, R., Wilson, T.L., Henkel, C. 123
- VLA maps of ammonia in Orion-KL: fine-scale structure and geometry
Hermesen, W., Wilson, T.L., Bieging, J.H. 276
- A multilevel study of ammonia in star-forming regions. III. Orion-KL
Hermesen, W., Wilson, T.L., Walmsley, C.M., Henkel, C. 285
- Observational evidence for the influence of the magnetic field on star formation in the Serpens molecular cloud
Gomez de Castro, A.I., Eiroa, C., Lenzen, R. 299
- High resolution H I observations of dark clouds. I. L134
van der Werf, Paul P., Goss, W.M., Vanden Bout, P.A. 311

The Sun

- The observation of the low-frequency component of oscillations in the Sun's chromosphere
Merkulenko, V.E., Mishina, M.I., Yazev, S.A. 131

- Effects of CO molecules on the outer solar atmosphere. Dynamical models with opacity distribution functions
Muchmore, D., Kurucz, R.L., Ulmschneider, P. 138
- Can stationary velocity fields explain the Stokes V asymmetry observed in solar magnetic elements?
Solanki, S.K., Pahlke, K.D. 143
- Overshoot of horizontal and vertical velocities in the deep solar photosphere
Nesis, A., Durrant, C.J., Mattig, W. 153
- An example of the association of X-ray and UV emission with H α surges
Schmieder, B., Sinnott, G.M., Tandberg-Hanssen, E., Mein, P. 327
- The Evershed flow in the solar photosphere, chromosphere and chromosphere-corona transition region
Alissandrakis, C.E., Dialelis, D., Mein, P., Schmieder, B., Simon, G. 339

The solar system

- Meteoroids from comet Kohoutek 1973 XII
Fulle, M. 161
- Gaseous outbursts in comet P/Halley. A model for the dissociation of the OH radical
Silva, A.M., Mirabel, I.F. 350
- The dust tail of comet P/Halley from ground-based CCD images
Fulle, M., Barbieri, C., Cremonese, G. 362
- Interpretation of the zodiacal light in terms of a finite dust cloud
van Dijk, M.H.H., Bosma, P.B., Hovenier, J.W. 373

Celestial mechanics and astrometry

- Phobos and Deimos astrometric observations from Viking
Duxbury, T.C., Callahan, J.D. 169

Physical and chemical processes

- The influence of large-angle scattering on Fermi acceleration at shocks
Kirk, J.G., Schneider, P. 177
- Oscillator strength measurements in the vacuum-ultraviolet. III. Weak lines of neutral nitrogen
Goldbach, C., Nollez, G. 189
- An energy formula for nonlinear force-free magnetic fields
Berger, M.A. 355
- Origin of a possible diffuse electron-positron annihilation radiation
Signore, M., Vedrenne, G. 379

Instruments, data processing, and computational methods

- High resolution cluster method for topological studies of the light curves of gamma-ray pulsars
Buccheri, R., Di Gesù, V., Maccarone, M.C., Sacco, B. 194

